Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of detecting voice in a signal, comprising:

estimating a power of the signal;

autocorrelating the signal;

estimating a ~~characteristic~~ period of the autocorrelated signal;

comparing the estimated power to a power threshold and estimated period to a period threshold; and

detecting voice in the signal as a function of the ~~estimated characteristic~~ comparing.

2. (Original) The method of claim 1 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the method further comprising vacating the voice detection for the second frame if voice is not detected in both the first and third frames.

3. Canceled.

4. (Currently Amended) The method of claim ~~3~~ 1 wherein the power threshold is in the range of -45 to -55 dBm.

5. (Currently Amended) The method of claim 1 wherein the ~~characteristic~~ period comprises pitch period.

6. (Previously Presented) The method of claim 5 wherein the detection of voice in the signal is further based on the estimated pitch period of the autocorrelated signal being in the range of 60-400 Hz.

7. (Currently Amended) The method of claim 6 wherein the ~~characteristic comprises amplitude, and the~~ voice detection comprises detecting the amplitude of the autocorrelated signal with one period shift and with no shift, the voice detection being further based on the amplitude of autocorrelated signal with one period shift being in the range of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

8. (Currently Amended) The method of claim 6 wherein the ~~characteristic comprises peak amplitude, and the~~ voice detection comprises detecting the peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

9. (Currently Amended) A voice detector, comprising:

autocorrelation logic to autocorrelate a signal;

power estimation logic to estimate power of the signal;

pitch estimation logic to detect pitch of the autocorrelated signal; and

frame based decision logic that detects voice in the signal as a function of the autocorrelated signal, the estimated power and the estimated pitch.

10. (Original) The voice detector of claim 9 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising final decision logic which vacates the detection of voice in the signal for the second frame if voice is not detected by the frame based decision logic for both the first and third frames.

11. (Currently Amended) The voice detector of claim 9 ~~further comprising a pitch period tracker to estimate a pitch period of the autocorrelated, and~~ wherein the frame based decision logic detects voice in the signal as a function of the estimated pitch period of the autocorrelated signal.

12. (Currently Amended) The voice detector of claim 11 ~~further comprising a power estimator which estimates power of the signal, and~~ wherein the frame based decision logic further compares the estimated power of the signal to a power threshold, the detection of voice in the signal being further a function of the power comparison.

13. (Previously Presented) The voice detector of claim 12 wherein the power threshold is in the range of -45 to -55 dBm, and the detection of voice in the signal is further based on the estimated power exceeding the power threshold.

14. (Currently Amended) The voice detector of claim 12 wherein the detection of voice in the signal by the frame based decision logic is further based on the estimated pitch period for the autocorrelated signal being in the range of 60 –to 400 Hz.

15. (Currently Amended) The voice detector of claim 14 wherein the frame based decision logic further detects an amplitude for the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal being further based on the amplitude of the autocorrelated signal with one period being in the range of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

16. (Original) The voice detector of claim 14 wherein the frame based decision logic further detects a peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

17. (Currently Amended) A transmission system, comprising:

a telephony device which outputs a signal; and

a voice detector having autocorrelation logic to autocorrelate the signal, power estimation logic to estimate power of the signal, pitch estimation logic to detect pitch of the autocorrelated signal, and frame based decision logic that detects voice in the signal as a function of the autocorrelated signal, the estimated power and the estimated pitch.

18. (Original) The transmission system of claim 17 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising final decision logic which vacates the detection of voice in the signal for the second frame if voice is not detected by the frame based decision logic for both the first and third frames.

19. (Currently Amended) The transmission system of claim 17 wherein the ~~voice detector further comprises a pitch period tracker to estimate a pitch period of the autocorrelated, and wherein the~~ frame based decision logic detects voice in the signal as a function of the estimated pitch period of the autocorrelated signal.

20. (Currently Amended) The transmission system of claim 19 wherein ~~the voice detector further comprises a power~~

~~estimator which estimates power of the signal, and wherein~~ the frame based decision logic further compares the estimated power of the signal to at least one power threshold, the detection of voice in the signal being further a function of the power comparison.

21. (Previously Presented) The transmission system of claim 20 wherein the power threshold is in the range of -45 to -55 dBm, and the detection of voice in the signal is further based on the estimated power exceeding the power threshold.

22. (Currently Amended) The transmission system of claim 19 wherein the detection of voice in the signal by the frame based decision logic is further based on the estimated pitch period for the autocorrelated signal being in the range of 60 – to 400 Hz.

23. (Currently Amended) The transmission system of claim 22 wherein the frame based decision logic further detects an amplitude for the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal being further based on the amplitude of the autocorrelated signal with one period being in the range of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

24. (Original) The transmission system of claim 22 wherein the frame based decision logic further detects a peak amplitude of the autocorrelated signal with no shift and with a shift, the

detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

25. (Original) The transmission system of claim 17 wherein the telephony device comprises a telephone.

26. (Original) The transmission system of claim 17 further comprising a public switched telephone network coupling the telephony device to the voice detector.

27. (Previously Presented) A system for processing a signal, comprising:

a voice exchange capable of exchanging voice in the signal between a telephony device and a network;

a voiceband data exchange capable of exchanging data in the signal between a data device and the network;

a voice detector to detect voice in the signal during the voice band data exchange; and

a resource manager which terminates the voiceband data exchange and invokes the voice exchange when the voice detector detects voice in the signal.

28. (Previously Presented) The signal processing system of claim 85 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice

detector further comprising final decision logic which vacates the detection of voice in the signal for the second frame if voice is not detected by the frame based decision logic for both the first and third frames.

29. (Previously Presented) The signal processing system of claim 85 wherein the voice detector further comprises a pitch period tracker to estimate a pitch period of the autocorrelated, and wherein the frame based decision logic detects voice in the signal as a function of the estimated pitch period of the autocorrelated signal to a threshold.

30. (Previously Presented) The signal processing system of claim 29 wherein the voice detector further comprises a power estimator which estimates power of the signal, and wherein the frame based decision logic further compares the estimated power of the signal to a power threshold, the detection of voice in the signal being further a function of the power comparison.

31. (Previously Presented) The signal processing system of claim 30 wherein the power threshold is in the range of -45 to -55 dBm, and the detection of voice in the signal is further based on the estimated power exceeding the power threshold.

32. (Currently Amended) The signal processing system of claim 29 wherein the detection of voice in the signal by the frame based decision logic is further based on the estimated

pitch period for the autocorrelated signal being in the range of 60 –to 400 Hz.

33. (Currently Amended) The signal processing system of claim 32 wherein the frame based decision logic further detects an amplitude for the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal being further based on the amplitude of the autocorrelated signal with one period being in the range of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

34. (Original) The signal processing system of claim 32 wherein the frame based decision logic further detects a peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

35. (Previously Presented) A method of processing a signal, comprising:

invoking a data exchange service to exchange data in the signal between a data device and a network;

invoking a voice detection service to detect voice in the signal when the data exchange service is invoked; and

terminating the data exchange service and invoking a voice exchange service when the voice detector detects voice in the signal.

36. (Previously Presented) The method of claim 86 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising vacating the detection of voice in the signal for the second frame if voice is not detected by the frame based decision logic for both the first and third frames.

37. (Previously Presented) The method of claim 86 wherein the invoked voice detection service further comprising estimating power of the signal, and comparing the estimated power of the signal to a power threshold, the detection of voice in the signal being further a function of the estimated power comparison.

38. (Previously Presented) The method of claim 37 wherein the power threshold is in the range of -45 to -55 dBm.

39. (Previously Presented) The method of claim 86 wherein the characteristic comprises pitch period.

40. (Currently Amended) The method of claim 39 wherein the detection of voice in the signal is based on an autocorrelation pitch period in the range of 60 —to 400 Hz.

41. (Currently Amended) The method of claim 40 wherein the characteristic comprises amplitude, and the invoked voice

detection service further comprises detecting the amplitude of the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal being further based on the amplitude of autocorrelated signal with one period shift being in the range of 0.25 -to 0.40 of the amplitude of the autocorrelated signal with no shift.

42. (Previously Presented) The method of claim 40 wherein the characteristic comprises peak amplitude, and the invoked voice detection service comprises detecting the peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

43. (Currently Amended) Computer-readable media embodying a program of instructions executable by a computer to perform a method of detecting voice in a signal, the method comprising:

estimating a power of the signal;

autocorrelating the signal;

estimating a ~~characteristic~~ period of the autocorrelated signal;

comparing the estimated power to a power threshold and estimated period to a period threshold; and

detecting voice in the signal as a function of the ~~estimated characteristic~~ comparing.

44. (Original) The computer-readable media of claim 43 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the method further comprising vacating the voice detection for the second frame if voice is not detected in both the first and third frames.

45. Canceled.

46. (Currently Amended) The computer-readable media of claim ~~35~~ 43 wherein the power threshold is in the range of -45 to -55 dBm.

47. (Currently Amended) The computer-readable media of claim 43 wherein the ~~the~~ characteristic comprises pitch period.

48. (Currently Amended) The computer-readable media of claim 47 wherein the detection of voice in the signal is further based on the estimated pitch period of the autocorrelated signal being in the range of 60 –to 400 Hz.

49. (Currently Amended) The computer-readable media of claim 48 wherein the ~~characteristic comprises amplitude, and~~ the voice detection comprises detecting the amplitude of the autocorrelated signal with one period shift and with no shift, the voice detection being further based on the amplitude of autocorrelated signal with one period shift being in the range

of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

50. (Currently Amended) The computer-readable media of claim 48 wherein the ~~characteristic comprises peak amplitude, and the~~ voice detection comprises detecting the peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

51. (Currently Amended) A voice detector, comprising:

power estimation means for estimating power of the signal;

pitch estimation means for detecting pitch of the autocorrelated signal;

autocorrelation means for autocorrelating a signal; and

voice detection means for detecting voice in the signal as a function of the autocorrelated signal, the estimated power and the estimated pitch.

52. (Original) The voice detector of claim 51 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising means for vacating the detection of voice in the

signal for the second frame if the voice detection means does not detect voice for both the first and third frames.

53. (Currently Amended) The voice detector of claim 51 ~~further comprising means for estimating a pitch period of the autocorrelated signal, and~~ wherein the voice detection means detects voice in the signal in the signal as a ~~funvtion~~ function of the estimated pitch period of the autocorrelated signal.

54. (Currently Amended) The voice detector of claim 53 further comprising ~~power estimation means for estimating power of the signal, and~~ means for comparing the estimated power of the signal to a power threshold, wherein the voice detection means is further adapted to detect voice in the signal as a function of the power comparison.

55. (Previously Presented) The voice detector of claim 54 wherein the power threshold is in the range of -45 to -55 dBm, and the detection of voice in the signal is further based on the estimated power exceeding the power threshold.

56. (Currently Amended) The voice detector of claim 53 wherein the detection of voice in the signal by the voice detection means is further based on the estimated pitch period for the autocorrelated signal being in the range of 60 –to 400 Hz.

57. (Currently Amended) The voice detector of claim 56 further comprising amplitude detection means for detecting an amplitude for the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal by the voice detecting means being further based on the amplitude of the autocorrelated signal with one period being in the range of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

58. (Original) The voice detector of claim 56 further comprising amplitude detection means for detecting a peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal by the voice detection means being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

59. (Currently Amended) A transmission system, comprising:

a telephony device which outputs a signal; and

a voice detector having autocorrelation means for autocorrelating the signal, power estimation means for estimating power of the signal, pitch estimation means for detecting pitch of the autocorrelated signal, and voice detection means for detecting voice in the signal as a function of the autocorrelated signal, the estimated power and the estimated pitch.

60. (Original) The transmission system of claim 59 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising means for vacating the detection of voice in the signal for the second frame if voice is not detected by the voice detection means for both the first and third frames.

61. (Currently Amended) The transmission system of claim 59 wherein the ~~voice detector further comprises estimating a pitch period of the autocorrelated, and wherein the~~ voice detection means detects voice in the signal as a function of the estimated pitch period of the autocorrelated signal.

62. (Currently Amended) The transmission system of claim 61 wherein the voice detector further comprises ~~power estimation means for estimating power of the signal, and~~ means for comparing the estimated power of the signal to at least one power threshold, wherein the detection means is further adapted to detect voice in the signal as a function of the power comparison.

63. (Previously Presented) The transmission system of claim 62 wherein the power threshold is in the range of -45 to -55 dBm, and the detection of voice in the signal is further based on the estimated power exceeding the power threshold.

64. (Currently Amended) The transmission system of claim 61 wherein the detection of voice in the signal by the voice detection means is further based on the estimated pitch period for the autocorrelated signal being in the range of 60 –to 400 Hz.

65. (Currently Amended) The transmission system of claim 64 further comprising amplitude detection means for detecting an amplitude for the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal by the voice detection means being further based on the amplitude of the autocorrelated signal with one period being in the range of 0.25–to 0.40 of the amplitude of the autocorrelated signal with no shift.

66. (Original) The transmission system of claim 64 further comprising amplitude detection means for detecting a peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal by the voice detection means being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

67. (Original) The transmission system of claim 59 wherein the telephony device comprises a telephone.

68. (Original) The transmission system of claim 59 further comprising a public switched telephone network coupling the telephony device to the voice detector.

69. (Previously Presented) A system for processing a signal, comprising:

voice means for exchanging voice in the signal between a telephony device and a network;

data means for exchanging data in the signal between a data device and the network;

a voice detector to detect voice in the signal during the data exchange; and

means for terminating the data exchange and invoking the voice exchange when the voice detector detects voice in the signal.

70. (Previously Presented) The signal processing system of claim 87 wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising means for vacating the detection of voice in the signal for the second frame if the voice detection means does not detect voice for both the first and third frames.

71. (Previously Presented) The signal processing system of claim 87 wherein the voice detector further comprises means for estimating a pitch period of the autocorrelated, and wherein the

voice detection means detects voice in the signal as a function of the estimated pitch period of the autocorrelated signal.

72. (Original) The signal processing system of claim 69 wherein the voice detector further comprises power estimation means for estimating power of the signal, means for comparing the estimated power of the signal to at least one power threshold, wherein the detection means is further adapted to detect voice as a function of the power comparison.

73. (Previously Presented) The signal processing system of claim 72 wherein the power threshold is in the range of -45 to -55 dBm, and the detection of voice in the signal is further based on the estimated power exceeding the power threshold.

74. (Currently Amended) The signal processing system of claim 71 wherein the detection of voice in the signal by the voice detection means is further based on the estimated pitch period for the autocorrelated signal being in the range of 60 — to 400 Hz.

75. (Currently Amended) The signal processing system of claim 74 further comprising amplitude detection means for detecting an amplitude for the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal by the voice detection means being further based on the amplitude of the autocorrelated signal with one period being in

the range of 0.25 —to 0.40 of the amplitude of the autocorrelated signal with no shift.

76. (Original) The signal processing system of claim 74 further comprising amplitude detection means for detecting a peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal by the detection means being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

77. (Previously Presented) Computer-readable media embodying a program of instructions executable by a computer to perform a method of processing a signal, the method comprising:

invoking a data exchange service to exchange data in the signal between a data device and a network;

invoking a voice detection service to detect voice in the signal when the data exchange service is invoked; and

terminating the data exchange service and invoking a voice exchange service when the voice detector detects voice in the signal.

78. (Currently Amended) The computer-readable media of claim 88 ~~77~~ wherein the signal comprises first, second and third frames, the first frame preceding the second frame in time and the second frame preceding the third frame in time, the voice detector further comprising vacating the detection of voice in

the signal for the second frame if voice is not detected by the frame based decision logic for both the first and third frames.

79. (Previously Presented) The method of claim 88 wherein the invoked voice detection service further comprising estimating power of the signal, and comparing the estimated power of the signal to a power threshold, the detection of voice in the signal being further a function of the estimated power comparison.

80. (Previously Presented) The computer-readable media of claim 88 wherein the power threshold is in the range of -45 to -55 dBm.

81. (Previously Presented) The computer-readable media of claim 88 wherein the characteristic comprises pitch period.

82. (Currently Amended) The computer-readable media of claim 81 wherein the detection of voice in the signal is further based on an autocorrelation pitch period in the range of 60 ~~-~~to 400 Hz.

83. (Currently Amended) The computer-readable media of claim 82 wherein the characteristic comprises amplitude, and the invoked voice detection service further comprises detecting the amplitude of the autocorrelated signal with one period shift and with no shift, the detection of voice in the signal being further based on the amplitude of autocorrelated signal with one

period shift being in the range of 0.25 –to 0.40 of the amplitude of the autocorrelated signal with no shift.

84. (Previously Presented) The computer-readable media of claim 82 wherein the characteristic comprises peak amplitude, and the invoked voice detection service comprises detecting the peak amplitude of the autocorrelated signal with no shift and with a shift, the detection of voice in the signal being further based on the peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude of the autocorrelated signal with no shift.

85. (Previously Presented) The signal processing system of claim 27 wherein the voice detector comprises autocorrelation logic to autocorrelate the signal, and frame based decision logic that detects voice in the signal as a function of the autocorrelated signal.

86. (Previously Presented) The method of claim 35 wherein the invoked voice detection service comprises autocorrelating the signal, estimating a characteristic of the autocorrelated signal; and detecting voice in the signal as a function of the estimated characteristic.

87. (Previously Presented) The signal processing system of claim 69 wherein the voice detector comprises autocorrelation means for autocorrelating the signal, and voice detection means

for detecting voice in the signal as a function of the autocorrelated signal.

88. (Previously Presented) The computer-readable media of claim 77 wherein the invoked voice detection service comprises autocorrelating the signal, estimating a characteristic of the autocorrelated signal; and detecting voice in the signal as a function of the estimated characteristic.